

Reduction of Near Field E-M Scattering Using High Impedance Coating Materials

Abstract

The present invention selectively uses a high-impedance layer to reduce the effects of E-M scattering at metallic discontinuities. The high-impedance layer can be fabricated using a combination of metallic and resistive materials that are typically used in electro-static discharging (ESD) applications. A thin layer of metal can be deposited on the surface of a dielectric substrate such as polyethylene. This metallic layer can be on an inner, outer, or buried layer of the material. The metallic layer allows the RF induced currents to spread out over a designated surface area. A layer of resistive material can be applied to a similar dielectric layer. The resistive layer provides sufficient attenuation to decrease the RF surface waves and minimize electromagnetic scattering on the printed circuit board (PCB). Furthermore, since the metallic and resistive materials can be applied in very thin layers, sufficient transparency can be preserved in desired areas such as the mobile phone's display region.